# SEISMIC PERFORMANCE OF REINFORCED CONCRETE SCHOOL IN SABAH

HAMIM BIN SOVESTER

B. ENG(HONS.) CIVIL ENGINEERING

UNIVERSITI MALAYSIA PAHANG

**SUPERVISOR'S DECLARATION**

I hereby declare that I have checked this thesis and in my opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Civil Engineering.

_______________________________

(Supervisor's Signature)

Full Name :DR MOHD IRWAN BIN ADIYANTO

Position : SENIOR LECTURER

Date :

_______________________________

(Co-supervisor's Signature)

Full Name :

Position :

Date :

**STUDENT'S DECLARATION**

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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(Student's Signature)

Full Name : HAMIM BIN SOVESTER

ID Number : AA13127

Date : 14 JUNE 2017

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HAMIM BIN SOVESTER

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# TABLE OF CONTENT

## LIST OF TABLES

## LIST OF FIGURES

## LIST OF SYMBOLS

| | |
|---|---|
| $\Delta$ | Displacement |
| $\Delta_{max}$ | Maximum displacement |
| R | Force Reduction Factor |
| V | Shear |
| $Q_k$ | Live load |
| $G_k$ | Dead load |
| $f_{cu}$ | Concrete compressive strength |
| $f_y$ | Yield strength of steel |
| $C_t$ | Coefficient |
| $F_b$ | Base shear force |
| q | Behaviour factor |
| $\gamma$ | Base Shear Coefficient |
| T1 | Fundamental Period |
| $T_B$ | Lower limit of the period of the constant spectral acceleration branch Beginning of the constant displacement response |
| $T_D$ | range of the spectrum |
| $S$ | soil factor |
| $S_d(T)$ | design spectrum |
| $B$ | lower bound factor for the horizontal design spectrum (0.2) |

## LIST OF ABBREVIATIONS

| | |
|---|---|
| FEMA | Federal Emergency Management Agency |
| BS | British Standard |
| MMD | Malaysia Metrology Department |
| JMGM | Jabatan Mineral and Geoscience Malaysia |
| RC | Reinforced Concrete |
| FFE | Far Field Earthquake |
| MDOF | Multi Degree of Freedom |
| NEHPR | National Earthquake Hazards Reduction Program |
| NFE | Near Field Earthquake |
| IDR | Interstorey Drift Ratio |
| SDOF | Single Degree of Freedom |
| UBC | Uniform Building Code |
| USGS | U.S. Geological Survey |
| DNFS | Near Field Single Earthquake on Soil Type D |
| DNFR | Near Field Multiple Earthquake on Soil Type D |